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# Perennials & Biennials for Montana Gardens

by Dara Palmer, Montana Master Gardener Coordinator

Montana may have a short growing season, but once you know what varieties work best in our climate you can have beautiful flowers from year to year with a modicum of care. Here we will cover the basics: proper planting, watering, weeding, fertilizing and propagating, as well as provide a substantial list of herbaceous ornamentals that do well in most Montana climates.

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## PERENNIAL PLANTS ARE THOSE THAT LIVE FROM

year to year. They die back to the ground in winter and grow up from the roots every spring. Biennials, on the other hand, form a rosette of leaves close to the ground in the first season; then produce stems, flower stalks and seed the second year, after which they die. Some new biennial cultivars have been developed that will bloom the first year.

## **Site Selection & Preparation**

Aside from shade loving perennials and biennials, most plants require full sun for optimum performance. When selecting a site in the yard for a perennial bed or border, choose an area that gets at least six hours of sun a day in a spot with well-drained soil. Many plants don't do well when their "feet" are wet, so take care not to plant in low, wet areas that don't drain well or get much sun.

Because biennials, and perennials especially, are in the ground much longer than annuals, it is important to take some time creating a hospitable planting medium. First, get a soil test to determine the pH and nutrient content of the planting area. Many perennials won't survive longer than one year if the soil is not properly prepared, therefore, it is good practice to amend the soil with organic matter at the rate of 2-4 cubic yards per 1000 square feet. Work the soil to a depth of 6-12 inches, adding any nutrients necessary as per the results of a soil test.

## **Plant Selection**

Aside from light and drainage requirements, consider color, spread, height, season of bloom and maintenance needs when choosing plants for the yard. Form (shape) and texture are also good elements to regard when selecting plants, especially considering that most perennials only bloom for 4-6 weeks, leaving just the foliage for interest. To ensure color and interest throughout the growing season, select plants with varying bloom times, heights, shapes and leaf textures.

Plants can be grown from seed and then transplanted, or sown directly in the garden. Be aware that seed saved from previous year's plants may not be true to type. Purchasing container plants at a local nursery will offer the most variety. When selecting perennials and biennials from the nursery, choose from the center of the display, where plants are less likely to be dried out; pop the plant out of the pot and look at the roots, make sure they are firm and whitish in color; check the underside of the leaves for bugs and, although tempting, choose plants that are not already in bloom.

# **Planting**

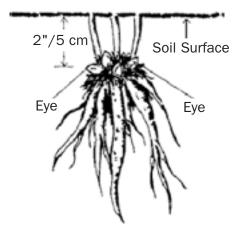
It is helpful to set out your potted plants in the bed to judge spacing and placement before planting. Unless the plan is to move or divide plants sooner than usual, remember to space them according to their mature size.

Dig a hole that is slightly wider than the pot and deep enough that the crown of the plant is at ground level. Gently remove the plant from the pot by pushing it out from the bottom or tipping it upside down in your hand; pulling it out of the pot from the top risks damage to the stems and leaves. If the plant is root bound in the pot and is not coming out, the pot can be cut away with scissors or a knife. In this instance, the roots will likely need to be teased apart to avoid girdling. To do this, simply use a knife and cut down the sides of the root ball in several places.

Set the plant in the prepared hole, spreading the roots out. Backfill with the amended soil while gently pressing around the root ball to remove any air pockets and establish good soil contact with the roots. Water thoroughly, adding soil if needed due to settling.

Peonies will not bloom if they are planted too deep. They should be planted so that their "eyes" (dormant buds above the crown) are 2 inches or less below the soil surface (Figure 1, page 2).

FIGURE 1. Proper planting depth of peony



### Care

# Watering

When watering, some consideration should be given to soil type; sandy soils will need to be watered more frequently than clay soils, due to their varying degrees of water holding capacity. However, a general rule of thumb is 1 inch of water per week, with deep, infrequent watering to encourage root growth. During hot, windy periods, more water may be necessary. Newly-installed plants may need more frequent watering until they become established. Overhead watering is not recommended as it can promote foliage disease and increase evaporation; a drip irrigation system or soaker hose is best.

### Weeds

Weed control is best done by hand to avoid damaging or disturbing the plant roots. Organic mulches such as shredded or chipped bark, pine needles or shredded leaves are useful in impeding weed growth; yet conversely, can also prevent the desirable spread of self-sowing biennials and perennials. The benefits of mulch outweigh the cons. A 4-6 inch deep layer of organic mulch around plants creates a uniform look while conserving soil moisture and providing soil nutrients and microorganisms. Mulch can be especially beneficial in the winter by insulating the plant from warm periods that may break dormancy, as well as protecting the plant crown from frost heaves.

## Fertilizer

Aside from the initial fertilizer application (done when preparing the planting site), additional nutrients may need to be added periodically, especially to plants that are heavy feeders (Astilbe, daylilies, peonies, delphinium and garden phlox, for example). Top-dressing with organic matter or broadcasting a general-purpose fertilizer in early spring may be sufficient for most herbaceous

ornamentals. For plants needing more nutrients (and those in containers) a water-soluble fertilizer applied every few weeks will sustain healthy plants. A general schedule for side-dressing plants with fertilizer is to apply about 2 pounds of nitrogen per 100 square feet in early spring and again during the summer. Take care not to fertilize after July 1, which will stimulate vegetative growth that will not have time to mature prior to winter. Mulching plants with compost in the fall, after growth has slowed, will improve the soil as well as provide some nutrients.

## **Maintenance**

# Disbudding

Disbudding is the process of removing the auxiliary or lateral buds on each stem, to allow more energy to be sent to the main bud, which will then produce a single, large flower. Peonies respond well to disbudding. This process is often used in the floral industry and for blooms grown for exhibition.

# Deadheading

Removing the spent flowers and immature seed pods from plants helps keep a garden bed looking clean and tidy, and helps maintain vigorous plant growth and often encourages a second bloom. Deadheading is very effective in controlling reseeding of plants that can become intrusive if left to self-sow (lady's mantle, catmint). To deadhead, simply pinch or cut a declining flower and its stem back to the next lateral flower, leaf or bud. Cutting at an angle away from the main stem will help encourage water runoff, decreasing chance of disease.

# Pinching and Shearing

Pinching and shearing are used to control the height of leggy plants and to encourage rebloom. Pinching is often done right after planting to focus plant energy to the root system and to promote a more compact growth habit. This also lowers the plants center of gravity which can help decrease the possibility of it flopping over later in the season. Similarly, shearing plants back to a height of 4-6 inches stimulates a more stout, well-branched growth. It is recommended to shear prior to bud formation to avoid removing potential blooms. Many perennials have the potential to flower a second time the same season. Shearing off the first blooms (and stems) as they are nearing expiration allows for a second flush of flowers, as well as a tidier appearance (sweet william, creeping phlox).

## Staking

Tall ornamental plants or those with large, heavy blooms, will likely need staking to prevent damage to the stems and flowers, especially in windy conditions. Keeping

plants upright and off surrounding vegetation also helps reduce the risk of disease and pests. There are many types of stakes available such as natural materials like bamboo and willow; plastic coated metal (which come in single stakes and hoops or rings); or also use stakes combined with string or twine to create a crisscross grid for stems to grow up through. To be sure the stakes don't detract from the plant features, choose a stake that is about 6 inches shorter than the height of the mature plant. Stakes should be set when the plant is still small, about one-third of its mature size. When using stakes, be careful to not damage the roots of the plant, that plants are not tied too tight (if using twine) and that the stake and plant stem don't rub together, creating a wound.

## Fall Clean-up

Except for perennials that have desirable winter interest, most should be cut back in the fall after the foliage has died down. As a rule, remove the stems, leaves and spent flowers back to 2-4 inches above the ground to protect the crown from winter damage. Completely remove any dead or diseased specimens. Sedums and other plants with interesting features or seed heads can be left over winter and cut back the following spring before new growth begins.

# **Propagation**

Division is the easiest and most common way to propagate perennials. Aside from the desire to create starts for additional planting, dividing is often necessary to maintain the size, bloom production and health of the plant. Three to five years after planting, plants may show signs of decreased flowering or develop dead spots. This is the plant telling it is time to dig and divide the root ball. To do this simply dig up the entire plant. Use a spade or sharp knife to cut the clump into sections, allowing for 2-3 healthy buds per new clump (Figure 2).

Remove and discard any dead patches or areas with damaged roots or stems. Conventional wisdom dictates that spring blooming plants should be divided in the fall with all other plants being divided in the spring. There are a few exceptions to this rule; fleshy-rooted perennials like peonies, Oriental poppies and daylilies are best divided in the fall.

Spring division should be done when the plant has 2-4 inches of new growth, allowing a better look at healthy buds and to determine where division should occur. Division can still be done in the fall, but take care to do it early enough that the new plants have time to establish a root system before the ground freezes. Regardless of when to propagate, know that newly divided plants may not flower the first season.

FIGURE 2. Perennial division of Sedum (http://www.mflandscapeanddesign.com)



		ļ	1		Bloom			Tolerances:		
		ıybe	ueigiii	<b>o</b> preau	Season		Light	Moisture	Soils	Notes.
Achillea spp.	Yarrow	Perennial	18-24"	18-28"	June-Sept	Yellow, white, red, orange	S.	۵		'Moonshine', 'Paprika', 'Summer Pastels'
Achillea filipedulina	Femleaf yarrow	Perennial	36"	24"	June - August	Yellow	S	۵		'Coronation Gold'
Aconitum spp.	Monkshood	Perennial	30-48"	12-18"	July - August	Purple	FS/PS			all parts poisonous
Aegopodium podagraria	Snow on the Mountain	Perennial	10-15"	12-18"	June	White	PS/SH			'Variegatum', Can be invasive
Agastache spp.	Giant Hyssop	Perennial	24-36"	18-24"	July - Sept	Purple, blue	FS	О		Blue Fortune', can reseed
Ajuga reptans	Bugleweed	Perennial	.8-9	ground cover	June	Purple, blue	FS/PS			'Catlin's Giant', 'Chocolate Chips', 'Burgundy Glow'
Alcea spp.	Hollyhock	Biennial	.8-9	18-24"	Jun-Aug	White, yellow, pink, red, purple	S			Susceptible to Hollyhock rust
Alchemilla mollis	Lady's Mantle	Perennial	16-24"	15-18"	June-July	Chartreuse	FS/PS			
Anemone	Anemone	Perennial	18"	18"	May & Sept	White, magenta, pink	FS/PS			
Antennaria dioica	Pussytoes	Perennial	4-6"	10-12"	May-June	Pink, white	æ	۵		
Aquilegia spp.	Columbine	Perennial	1-2'	12"	May-Jun	Blue, red, white, yellow, et al.	FS/PS			Naturalizes
Aralia cordata	Japanese Spikenard	Perennial	3-5,	3-5,	July-Sept	White	PS			'Sun King', gold,/ chartreuse leaves
Armeria maritima	Thrift	Perennial	6-12"	<u>*</u>	May-July	Pink	S.			
Artemisia schmidtiana	Silver Mound Wormwood	Perennial	6-12"	ground cover	June-July	White		Q	poor	'Silvermound'
Aruncus dioicus	Goatsbeard	Perennial	4-6'	2-4'	June-July	Cream, white	FS/PS			
Asclepias tuberosa	Milkweed/ Butterfly weed	Perennial	1-3,	1-3,	July-Oct	Orange, yellow	S.	۵		
Aster	Aster	Perennial	12-18"	24"	Aug-Sept	White, pink, blue, purple	S.			'Wood's Purple'
Astilbe x arendsii	False Spirea	Perennial	12-24"	8-12"	June-Aug	Cream-White, red, pink	PS/SH			'Bridal Veil', 'Fanal'
Astrantia major	Masterwort	Perennial	18-24"	18-24"	June-July	Pink, white, red	PS			'Moulon Rouge', 'Ruby Wedding', 'Magnum Blush'
Athyrium filix- femina	Lady Fern	Perennial	30"	12-24"	N/A	Green foliage	PS/FS			
Aubrieta deltoidea	Rockcress	Perennial	<b>.</b>	ground cover	Apr-May	Purple, blue, violet, red, white, pink	£			
Aurinia saxatilis	Basket of Gold	Perennial	8-12"	12-24"	Apr-June	Yellow	FS/PS			
Baptisia australis	Blue wild indigo	Perennial	2-4'	18-30"	June	Blue	S.	Q		
Bergenia cordifolia	Heart-leaved bergenia, Pigsqueak	Perennial	12"	ground cover	Apr-May	Dark pink	HS	*		
Brunnera macrophylla	Siberian Bugloss	Perennial	12-16"	15-18"	May-June	Blue	SH			
Campanula medium	Canterbury Bells	Perennial	2-3,	12"	June-Aug	Blue, violet, red, white	FS/PS			
Campanula rotundifolia	Blue bell, harebell	Perennial	12-18"	6-12"	June - Sept	Blue	FS/PS			

			pe	sisonous					ianť					; winter interest			λ,							
Notes:			Roots need to be shaded	Naturalizes, all parts poisonous	'Moonbeam'				'King of Hearts', 'Luxuriant'	Leaves poisonous		Compact, petals droop	Self-seeds	'White Swan', 'Magnus'; winter interest	winter interest	winter interest	'Arizona Sun', 'Burgundy'				'Summer Sun'			
Soils												clay, dry, rocky		poor			poor				clay			
<b>Tolerances:</b> Moisture		۵		•	Ω	•••••	•	Q	•	•		Q	Q	Q	••••	************	۵	>			۵	•		
Light	FS/PS	FS	FS/PS	PS/SH	S.	S.	FS/PS	S	PS	FS/PS	FS/PS	S	S	FS/PS	FS	FS/PS	FS.	PS/SH	FS/PS	S	FS	FS/PS	FS/SH	
Flower Color	Red, pale to crimson	White	Variety	White, pink	Yellow, orange, red	Blue, white, pink, violet	Red, pink, white, bicolors	Pink	Deep Red, Cherry Red, Deep Pink	Pink, white, purple	Yellow	Light pink, pale purple	Pale purple	Purplish-pink	Blue	Pink, magenta, mauve	Yellow, orange, red	White	Pink, magenta, blue, white	Red, orange, pink, white	Yellow-orange	Variety	Red, pink	
Bloom Season	May-June	May-June	June-Aug	May-June	June-Aug	June-Aug	May-Aug	May-Aug	May	May-July	Apr-June	June-July	June-August	Aug-Sept	July-Aug	July-Sept	July-Sept	May-June	May-Aug	June-Sept	June-Aug	May-Aug	May-June	
Spread	12-18"	ground cover	2-4'	3-6"	12-18"	2-3,	12"	12"	12-18"	18"	12-18"	9-18"	12-18"	18-24"	2-3,	3-4'	18-24"	ground cover	12-24"	12"	2-4'	6-12"	12"	
Height	18-36"	3-6"	7-10'	8-9	10-24"	4-6'	6-12"	6-12"	12-18"	24-36"	18-24"	12-24"	24-36"	24-36"	36-40"	5-7,	18-24"	.8-9	8-20"	24"	3-6,	15-40"	12-20"	
Туре	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Biennial	Perennial	Perennial	Biennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	
Common	Jupiter's beard, Red valerian	Snow in Summer	Clematis	Lily of the Valley	Tickseed	Larkspur	Sweet William	Cottage Pinks	Fringed Bleeding Heart	Foxglove	Leopard's Bane	Narrow-leaved Purple Coneflower	Pale Purple Coneflower	Purple Coneflower	Globe thistle	Joe Pye Weed	Blanket Flower	Sweet Woodruff	Cranesbill	Avens, Prairie Smoke	False Sunflower	Daylily	Coral Bells	
Scientific	Centranthus ruber	Cerastium tomentosum	Clematis	Convallaria majalis	Coreopsis	Delphinium	Dianthus barbatus	Dianthus plumarius	Dicentra formosa	Digitalis purpurea	Doronicum macrophyllum	Echinacea angustifolia	Echinacea pallida	Echinacea purpurea	Echinops ritro	Eutrochium purpureum	Gaillardia spp.	Galium odoratum	Geranium	Geum	Heliopsis helianthodies	Hemerocallis spp.	Heuchera sanguinea	

KEY: FS-Full Sun; PS-Part Sun; SH-Full Shade; D-Drought Tolerant: W-Tolerates wet soils

		urple Dragon'	pectabilis																				
Notes:		'Pink Pewter', 'White Nancy', Purple Dragon'	formerly known as Dicentra spectabilis	'Hidcote', 'Munstead'				May self-seed	Will self-sow	Will self-sow			Can become invasive	Rhizomatous	Naturalizes		'Walker's Low'				Naturalizes		
Soils						clay								clay	clay			clay					clay
<b>Tolerances:</b> Moisture	۵				۵	۵	≯	۵	Δ	>			≯	≫	≯	•••••	۵	۵		•		۵	D
Light	S	PS/SH	PS/SH	S	S.	S	PS/SH	FS	FS/PS	FS/PS	S	£	FS/PS	PS/SH	FS/PS	FS/PS	FS/PS	PS/SH	FS/PS	FS/PS	FS/PS	FS	S
Flower Color	White	White, pink, purple	White, pink	Purple	White with yellow center	Purple, white, Pink	Yellow	Lavender-blue	Sky blue	Scarlet red, white, rose	White, pink, yellow, blue, red, purple	Red	Yellow		Red, pink, white, lavender	Pink/lavender	Blue-violet	White	Pink, red, coral, white, yellow	Orange, yellow, salmon, pink, white	Orange-red, white, pink, dark red, salmon	Scarlet pink, red	Lavender blue
Bloom Season	Apr-May	May-July	April-May	June - August	July-Sept	July-Sept	June-July	July-Aug	May-June	July-Sept	May-July	June-Sept	June	N/A	July-Aug	July - Sept	June-Sept	April-May	May-June	May-June	May-July	May-July	July-Oct
Spread	6-18"	2-3,	18-30"	12-18"	2,	24"	4,	2-3'	12-18"	1-2,	12-18"	18"	24"	5-8,	2-3,	24-36"	18-36"	grd. Cover	2-3'	12"	24-36"	24-30"	2-4'
Height	6-12"	8-12"	24-36"	12-18"	1-3,	24-36"	3-4'	2-3,	24"	2-4'	3-4'	1-3'	4-6"	2-3,	24-36"	24-48"	1-2'	6-12"	2-3'	18"	24-48"	18-36"	3-5,
Туре	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial
Common	Candytuft	Spotted Dead Nettle	Bleeding Heart	Lavender	Shasta Daisy	Gayfeather, Blazing Star	Rocket, Leopard plant	Sea Lavender, perennial statice	Perennial flax	Cardinal flower	Lupine	Maltese cross	Creeping jenny, Moneywort	Ostrich Fern	Bee Balm, Bergamot	Wild Bergamot	Cat Mint	Japanese pachysandra	Peony	Iceland poppy	Oriental Poppy	Beardtongue	Russian Sage
Scientific	lberis sempervirens	Lamium maculatum	Lamprocapnos spectabilis	Lavendula angustifolia	Leucanthemum x superbum	Liatris spicata	Ligularia dentata	Limonium platyphyllum	Linum perenne	Lobelia cardinalis	Lupinus	Lychnis chalcedonica	Lysimachia nummularia	Matteuccia struthiopteris	Monarda didyma	Monarda fistulosa	Nepeta x faassenii	Pachysandra terminalis	Paeonia spp.	Papaver nudicale	Papaver orientale	Penstemon barbatus	Perovskia atriplicifolia

Scientific	Common	Туре	Height	Spread	Bloom Season	Flower Color	Light	<b>Tolerances:</b> Moisture	Soils	Notes:
Phlox paniculata	Garden phlox	Perennial	2-4'	2-3'	July-Sept	White, pink, red, blue, purple	FS/PS		clay	
Phlox subulata	Creeping Phlox, Moss Phlox	Perennial	3-6"	2,	Apr-June	Pink, white, red-purple, violet	S.	Q		
Polemonium caeruleum	Jacob's Ladder	Perennial	18-24"	18-24"	May-July	Blue, pink, white	PS/SH			
Pulmonaria spp.	Lungwort	Perennial	12"	12-18"	April-May	Rose pink, purple, blue, white	PS/SH			
Pulsatilla vulgaris	Pasque Flower	Perennial	8-12"	8-12"	April-May	Pale or dark violet, red	FS/PS			Ornamental seed head
Ratibida columnifera	Prairie coneflower, Mexican Hat	Perennial	12-36"	12-18"	June-Sept	Yellow	FS			
Rudbeckia hirta	Black-eyed Susan	Perennial	24-36"	12-24"	June-Sept	Yellow, Yellow-orange w/ brown center	£.	Q	clay	Short-lived
Rudbeckia fulgida	Black-eyed Susan	Perennial	24-36"	12-24"	June-Sept	Yellow w/brown center	FS	۵	clay	'Goldstrum'; winter interest
Salvia nemerosa	Meadow Sage, Perennial salvia	Perennial	2-3,	24"	June-Sept	Violet purple	£	۵		'May Night',
Saponaria ocymoides	Soapwort	Perennial	4-10"	ground cover	June-Sept	Dark pink	FS		poor	
Scabiosa spp.	Pincushion flower	Perennial	18-24"	18"	July-Aug	Lavender, blue, white, pink, red, maroon	FS			
Sedum spp.	Stonecrop	Perennial	3-24"	varies	Aug-Oct	Yellow, pink, red, white	FS	Δ		'Autumn Joy', 'Dragon's Blood', 'Kamtschatium', winter interest
Sempervivum tectorum	Hens & Chicks	Perennial	3-6"	6-18"	June-July	Reddish-purple	FS	Ω	poor	
Solidago spp.	Goldenrod	Perennial	4-6,	18"	July-Oct	Yellow	FS/PS			
Stachys byzantina	Lamb's Ear	Perennial	12-15"	12-18"	May-July	Purplish-pink	FS	Q		Can become invasive
Tanacetum densum	Partridge feather	Perennial	.8-9	18-24"	June	Yellow	FS/PS			interesting silver foliage
Thymus pseudola- nuginosus	Woolly Thyme	Perennial	3-6"	ground cover	June-July	pale pink	FS	۵		
Thymus serpyllum	Creeping Thyme	Perennial	3-6"	ground cover	June-July	Deep pink	FS	۵		Naturalizes, 'Pink Chintz'
Trollius europaeus	Globeflower	Perennial	18-24"	24"	May-July	Yellow	PS/SH	>		May self-sow
Veronica spicata	Spike Speedwell	Perennial	12-18"	12-18"	June-Aug	Pink, red	S			
Veronica Iiwanensis	Turkish veronica	Perennial	3-6"	12-24"	April-May	blue	FS			
Vinca minor	Common periwinkle, Creeping Myrtle	Perennial	4-6"	ground cover	May-June	Lavender blue	FS/PS	Δ		Naturalizes, winter interest
Yucca glauca	Soapweed	Perennial	2-5'	1-3,	June-July	Creamy white	FS	۵		Self-seeds

KEY: FS - Full Sun; PS-Part Sun; SH-Full Shade; D-Drought Tolerant: W-Tolerates wet soils



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